

REMARKS

Applicants have canceled claims 7 and 18 without prejudice. Claims 6, 8-17 and 19-21 are now pending in the application.

In the Office Action claims 6 and 17 were objected to because of informalities, and claims 7-16, 18 and 20 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Applicants have amended claims 6, 8-17 and 20 to correct the informalities and to make them definite.

Claims 6-17 and 19-21 were rejected in the Office Action under 35 U.S.C. 102(a) as being anticipated by EP 1,126,504 (EP '504). Claim 18 was rejected under 35 U.S.C. 103(a) as being obvious over EP '504.

The EP '504 reference describes an apparatus for sterilizing objects in an evacuable chamber using two plasma generating coils. The distance separating the two coils in EP '504 can be seen in the various embodiments depicted in Figs. 1, 3 and 4. The reference does not explicitly address the distance at which the two coils are located, and in particular does not describe or suggest locating the coils at a distance which corresponds to an average diameter of the coils. In fact, for the embodiments depicted in Figs. 3 and 4, it is not clear how such average diameter could be determined.

EP '504 describes how to sterilize hollow substrates having a large aspect ratio, such that the hollow substrates have a depth that is much larger than a dimension of the substrate aperture, and for example define a tube-shaped structure. Figure 1 of EP '504 shows a sterilization chamber adapted for a tube-like substrate. This figure and Fig. 2 show that the sterilization chamber is flat

and long, with the plasma generating coils located on upper and lower surfaces of the chamber. Accordingly, one of skill in the art would not enlarge the distance between the two plasma generating coils to the point that their distance corresponds to an average diameter of the coils, because increasing that distance would move the coils away from the upper and lower surfaces of the sterilization chamber, decreasing performance. Even if the sterilization chamber itself was enlarged, the resulting electromagnetic field surrounding the hollow substrate would be weakened.

As described in EP '504, the primary determinant of the size of the sterilization chamber is the size of the substrate to be treated. The space between the two windows corresponds substantially to the thickness of the plasma chamber occupied by the substrate, and the form and dimensions of the plasma chamber and windows depend on the size and shape of the substrate being treated. (Col. 8, lines 2-9.)

EP '504 teaches that it is important to generate a plasma in the inside of the hollow substrate. (Col. 4, lines 2-6.) In Fig. 6, the reference shows that the arrangement of the coils is specifically adapted for long, small tubes, as indicated by the efficiency curve 87 that shows a suitable efficiency for that arrangement. (Col. 7, lines 28-37.) If the distance between the two plasma generating coils is increased, the field of the electromagnetic field inside the long tube to be sterilized decreases, so that sterilization cannot be ensured. As a result, EP '504 does not describe nor suggest the coil spacing recited in claims 6 and 17, and actually teaches away from it.

In contrast, the invention recited in claims 6 and 17 has an antenna system comprising two plasma generating coils spread apart from each other, wherein a distance between the plasma generating coils corresponds to an average diameter of the coils, as explained in the specification, for example on page 3.

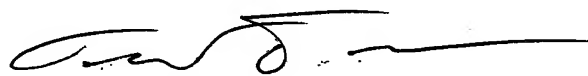
In view of the foregoing remarks, applicants respectfully submit that claims 6 and 17 are not anticipated and are allowable. The remaining claims depend from allowable claims, and at least for that reason are also submitted to be allowable.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #029082.55256US).

Respectfully submitted,

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Jeffrey D. Sanok
Registration No. 32,169

Paolo M. Trevisan
Registration No. 45,164

CROWELL & MORING LLP
Intellectual Property Group
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 624-2500
Facsimile No.: (202) 628-8844
JDS/PMT/hk